Landfill Gas Monitoring and Control Systems at Active Disposal Sites

Frequently Asked Questions

This FAQ, previously published June, 2008, was revised on July 28, 2008 to include additional information about enforcement as well as new information on closed site requirements and a related Board agenda item for August 2008.

On April 19, 2007, the California Integrated Waste Management Board (CIWMB) revised its regulations governing landfill gas (LFG) monitoring and control for active disposal sites. The new regulations apply to active disposal sites include the more detailed gas monitoring and control regulations previously applicable to only closed disposal sites. The text of the adopted regulations is available at *http://www.ciwmb.ca.gov/Regulations/Title27/ch3sb4b.htm#Article6.*

The affected regulatory code sections include: California Code of Regulations, Title 27 (27 CCR), Division 2, Subdivision 1, Chapter 3, Subchapter 4, Article 6, Sections 20917 et seq.). The Office of Administrative Law (OAL) approved the regulations on August 21, 2007. The regulations became effective on September 20, 2007.

Following are the frequently asked questions (FAQs) regarding the regulations.

1. What are the compliance dates for installation of a LFG monitoring and control system compliant with the requirements?

The compliance dates are as indicated in the below table. [See Title 27 CCR 20921(b).]

Operational Status	Compliance Date
Existing disposal sites (permitted for >20 tpd)	*By September 20, 2008*
Existing disposal sites (permitted for ≤20 tpd)	*By September 20, 2009*
Lateral expansions of existing disposal sites	*Prior to receipt of waste in expanded area*
Disposal sites that have received final shipment of waste	*Immediately*
Disposal sites actively implementing final closure activities	*In accordance with approved final closure plan time schedule*
New disposal sites	*Prior to receipt of waste*
Disposal sites properly closed by November 18, 1990	*None, unless required by Section 20919.*

At the August 12, 2008 Committee Meeting, CIWMB staff will be presenting an agenda item that seeks direction from the Board regarding implementation related to these regulations and staff's request to formally notice the 45-day comment period for proposed amendments to provide additional time for review and implementation of LFG Programs.

However, operators should continue to submit LFG Programs for review and LEAs should continue to review and take action on submittals. CIWMB staff will continue to review LFG

Programs for concurrence and can also provide technical assistance upon request. Until the Board acts, LEAs should determine compliance based on the existing requirements.

2. What constitutes compliance with the requirements for a LFG monitoring and control system?

Compliance entails submittal of the applicable gas monitoring and control system for approval, Enforcement Agency (EA) approval of the system with CIWMB concurrence and implementation of the approved system by installing and monitoring of all necessary components of a LFG monitoring and control system compliant with 27 CCR 20917 et seq.[1] *by the date indicated in the regulations.*

3. If an operator has submitted a proposed LFG monitoring and control system for compliance, but has not installed the required wells or probes, is the operator in violation of the standard(s)?

Yes. Compliance with the standard(s) requires installation and monitoring of all required wells and probes, not just the submittal of a proposed system.

4. If, due to potential need for environmental clearances or design and budget or other considerations, compliance cannot be achieved prior to the deadline dates, would the operator be considered in violation of the standard(s)?

Yes. The date for compliance is specified in the regulations. (See Question 1.) If circumstances beyond the control of the operator cause the operator to fail to meet the deadline, the facility operator would be in violation of the requirements. The EA would need to take appropriate enforcement actions as required by regulations and their approved Enforcement Program Plan. Non-compliance would eventually lead to the need to issue an enforcement order. Compliance would be achieved when the required program has been submitted and approved ***and*** *the required systems have been installed and monitoring has begun.*

4a. If operators are not in compliance by the September 2008 deadline, would the Inventory process be an appropriate approach to address noncompliance?

Yes. Many LEA's utilize the Inventory Process prior to initiating an enforcement action as outlined in their EPP. The Inventory process would be an appropriate way to address noncompliance with the regulations. Pursuant to California Code of Regulations, Title 14, Sections 18360 through 18368 (Inventory) a facility must be found to be out of compliance for two consecutive months before receiving a notice of intent (NOI) that they could be included on the Inventory of Solid Waste Facilities Which Violate State Minimum Standards (Inventory). The NOI indicates that the facility has 90 days to come into compliance. If after 90 days the LEA notes that the site remains noncompliant, it will be included on the Inventory. The LEA then has 15 days to issue a compliance schedule to the operator which is

[1] The regulations can be found at http://www.ciwmb.ca.gov/Regulations/Title27/ch3sb4b.htm#Article6.

designed to bring the facility into compliance within one year. However, this does not preclude the EA from pursuing any other enforcement actions as described in their EPP.

5. What is the process for submittal and approval of a new LFG monitoring and control system?

The landfill (LF) operator is to submit the proposed LFG monitoring and control system to the EA for its review and approval. If the EA does not approve the system, the operator would need to revise the system and resubmit it to the EA. Upon approval, EA will forward the proposed system to CIWMB for review. (The proposed system should be sent to the CIWMB jurisdictional contact within the Permitting and LEA Support Division[2] who will facilitate the review and response.) CIWMB will then either concur or object to the system. If CIWMB objects to the system, the operator would need to revise it and resubmit it to the EA and CIWMB. ***To facilitate the review, the operator may request that the LEA submit the LFG Program to CIWMB for a concurrent review. If plans are reviewed concurrently, the CIWMB comments will be provided to the LEA. CIWMB's formal review and action will not take place until after the LEA has approved the LFG Program and submitted it the the CIWMB with a request for concurrence.***

6. Are existing LFG monitoring and control systems exempt from meeting these requirements permanently or at least until the wells have to be replaced?

No, active sites are not exempt, but sites "certified closed" would be exempt until replacement wells or additional probes were needed. Operators of existing LFG Programs for active sites must demonstrate that their existing systems are in compliance with the standards as discussed in Question 8. (See Question 9 for more detail regarding the new regulations and certified closed sites.)

There is no provision in the regulations for an exemption to allow grandfathering of wells designed and installed at active sites if the wells do not meet all the current standards, particularly related to the new depth standard (maximum depth of waste for the entire landfill). (See Question 11 for requesting alternatives.)

7. If an active facility has an existing LFG monitoring and control system that is believed to meet the requirements, what is required relative to submittal of the proposed system required by the regulations?

Operators will need to submit to the EA a description of their existing system that demonstrates that the existing system is in compliance with the new standards. If EA finds that the system meets the requirements, it must submit the system description to CIWMB for review and concurrence. (See Question 5 for a description of the process.)

8. How does an operator demonstrate that an existing LFG monitoring and control system is in compliance with the standards?

[2] The jurisdiction contacts can be found at http://www.ciwmb.ca.gov/LEACentral/CountyAssign.asp.

The operator would need to submit a system design that demonstrates that the LFG monitoring system is in compliance with the standards. The system could include, but not be limited to: LFG well/probe as-builts, boring logs, plot plans showing well locations/spacing, and any other pertinent evidence. The regulations do not require the development of new information if existing information is available that adequately documents the LFG monitoring system compliance with the standards. Existing information may be located in the JTD or closure/postclosure plans, and could be referenced in the submittal.

9. If a LFG system has been previously approved by EA and/or CIWMB, what is required relative to submittal of the system required by the regulations?

While staff previously encouraged operators of active sites to consider using the closure standards as guidance because they would ultimately be subject to them at closure, previous reviews did not require that operators meet the new standards.

If the LFG monitoring system is in compliance with the requirements, the operator should follow the procedure set forth in Questions No. 7 and 8 above. If the existing LFG system does not meet the requirements, the operator shall submit a system design that includes the changes required to bring the system into compliance with the new requirements.

9a. If a disposal site has been certified closed prior to the effective date of the regulations (September 20, 2007) with an approved LFG Program installed as part of closure, does the LFG Program need to be upgraded to meet the current standards?

No, unless replacement wells, or any additional wells, are being installed. LFG monitoring programs do not have to be upgraded at this time at these sites since, at the time of closure, the LFG monitoring program was evaluated for compliance with the standards in effect at the time, and were determined to appropriately monitor for Landfill gas consistent with the new requirements. Any future installations of new or replacement wells shall meet the current standards.

10. Are there exemptions and/or alternatives to the requirements?

Yes. There can be exemptions from the regulations and alternatives to certain of the requirements. To qualify for a complete exemption from LFG monitoring, the operator would need to demonstrate that the LF does not produce LFG. The criteria for alternatives for the location, spacing, and depth of LFG wells are outlined in 27 CCR 20925.

11. What is the process for requesting alternatives to the standard(s)?

*The operator would need to demonstrate to the satisfaction of the EA **and CIWMB** that there is no potential for adverse impacts on public health and safety or the environment that would result from satisfying the requirements through an alternative. This demonstration could include a description of how the current or proposed LFG monitoring system meets the criteria for the part of the requirements subject to the alternative request. Evidence could include, but not be limited to: site geology, hydrogeology, boring logs, plot plans, and any other pertinent evidence. The regulations do not require the development of new information*

if existing information is available to adequately document the efficacy of an exemption.

EA and CIWMB will grant or deny the request for alternative(s). The alternative(s) will be reviewed at least every five years and either extended or terminated.

12. Is it possible to propose an alternative to LFG monitoring for a portion of the LF?

In those cases when an operator believes monitoring along the entire perimeter of the waste disposal footprint (i.e., facility boundary) is not necessary, the operator shall demonstrate to the satisfaction of EA and CIWMB that LFG migration ***could not occur*** *due to geologic barriers* ***and*** *that no inhabitable structure or other property or land use, such as agricultural lands, within 1,000 feet of the disposal site permitted facility boundary is threatened by LFG migration [27 CCR 20925(a)(1)]. The demonstration shall be specific to the portion of the perimeter where the operator proposes to not monitor.*

13. Since the mouth of a canyon LF may be hundreds of feet lower than the upper permitted boundary, does a canyon LF have to install wells and probes to the depth of waste as required by Title 27 CCR 20925 (c)?

Yes, unless that operator can demonstrate in their LFG monitoring and control system that an alternative monitoring depth is appropriate. The operator may propose an alternate system of equivalent probe depths. The proposal must demonstrate to the satisfaction of EA and CIWMB that probes located at these depths are sufficient to detect migrating LFG and provide protection to public health and safety and the environment consistent with 27 CCR 20925(c)(2).

Please note that pursuant to both State and Federal requirements, landfill operators must monitor LFG to ensure that the concentration of LFG does not exceed regulatory standards including gas at the property boundary at any depth. Existing wells that are not constructed to the required depth may not be able to meet the State and Federal standards for ensuring that gas migration does not exceed compliance levels. If the probes in the wells are not at adequate depths, the existing wells do not need to be abandoned but can be supplemented with additional wells or probes.

14. If no structures exist within 1,000 feet of the permitted facility boundary, is LFG monitoring required?

Although it may be reported that no inhabitable structures are located within 1,000 feet of a landfill footprint, there is no guarantee that structures will not be located closer in the future. Therefore, LFG monitoring is necessary. Indeed, the CIWMB's explosive gas control regulations were adopted in part to effectuate the RCRA requirement set forth in 40 CFR §258.23, and in implementing that regulation the EPA noted:

> *"Commenters recommended that disposal facilities not in close proximity to off-site structures be exempted from the gas criteria. Considering that gas production in disposal facilities is a long-term process continuing for*

decades, the Agency rejected this recommendation. Facilities which are remote today may be surrounded by extensive development in the future, especially after completion of disposal operations." (Federal Register, Vol. 44, No. 179, p. 53459)

15. If no structures exist within 1,000 feet of the permitted facility boundary, is spacing of greater than 1,000 feet between wells appropriate?

No. This cannot be the only criteria for requesting a variance or modification of the requirements. Please note that the 1,000 feet maximum spacing requirement was based on the assumption that there were no nearby structures. If structures or other receptors are nearby, spacing of less than 1,000 feet between wells may be necessary.

Please note that to justify larger spacing than 1,000 feet between wells, the operator must demonstrate that there is ***no potential*** *for adverse impacts on the public health and safety and the environment from such wider spacing. The factors specified in 27 CCR 20923(a)(2) shall be used to make the demonstration.*

16. Are bar hole punches adequate for LFG monitoring in lieu of wells/probes?

No. Bar hole punches at best only monitor gas at a level of 2 – 3 feet below the ground surface. The depth of waste at most landfills is much deeper. Therefore, bar hole punches do not monitor for migration of LFG at depth.

Furthermore, in the technical guidance document (Solid Waste Disposal Facility Criteria, Technical Manual, November 1993) prepared by the Federal Environmental Protection Agency the guidance describes gas monitoring wells and probes as the method necessary to comply with the Federal RCRA Subtitle D standards. The State standards are consistent with and based on the Federal standards.

17. What does "disposal site permitted facility boundary" mean? Is it the same as the operator property boundary?

The term "disposal site permitted facility boundary" as used in the regulations is consistent with the existing definition in 27 CCR 20164 for "facility boundary" which means the boundary surrounding the entire area on which solid waste facility activities occur and are permitted.

18. May compliance wells and probes be located on easements?

Easements not included within the disposal site permitted facility boundary would be considered outside the compliance boundary. With the consent of the owner of the land on which the easement is located, the operator has the option of including easements within the disposal site permitted facility boundary. If these easements are to be considered part of the landfill then they must be included within the permit documents. Monitoring wells and

probes located outside the disposal site permitted facility boundary would not be considered compliance probes and would not comply with State and Federal standards.

19. In which document(s) does the description of the LFG monitoring and control system need to be included?

*Pursuant to Title 27 CCR 20921(d) the LFG monitoring and control system shall be included in **both** the joint technical document (JTD) and the closure/postclosure maintenance (pcm) plans. These documents must also include the schedule for implementation of the system in detail if the system has not already been implemented.*

Preliminary closure plans may be and often are submitted as part of the JTD. If they are not, the preliminary closure plan must be a stand-alone document and must include all required information. Furthermore, closure/pcm plans are to be updated every time a permit is revised or reviewed. Likewise the JTD may need to be updated at the same time. Since both documents are to be updated at the same time, they should remain consistent.

20. If permit review, or permit modification or revision documents, or closure/postclosure maintenance plans are submitted before the operator has complied with the new requirements, how does that impact the processing of permit applications and preliminary closure and postclosure maintenance plans?

Permit applications, JTD amendments and preliminary closure/pcm plans that are submitted to EAs before the compliance deadlines should contain a description of both the existing LFG monitoring and control system and any changes to the LFG monitoring and control system that are required to bring it into compliance with the regulations. Although there is no requirement that applicants submit information about their intended manner of achieving compliance with the new regulations, it is in the applicant's best interest to do so to demonstrate to the EA how it intends to achieve compliance with the new regulations. Findings relative to the adequacy of the permit documents will be based on requirements in effect when the documents were submitted. When applicants submit information about their intended manner of achieving compliance with the new regulations, EAs should inform the applicant whether the proposed system, once implemented, will satisfy the new requirements.

After the deadlines for compliance have passed, any submitted documents, including permit applications, JTDs and closure/pcm plans, must be compliant with the requirements.

With regards to closure/pcm plans, the closure cost estimate should include the estimated cost for any changes necessary. However, once the changes have been implemented, the cost estimate may be revised to reflect a lower closure cost. The pcm plan should include the estimated cost to monitor and maintain the upgraded system. There should be no impact on the processing of closure/pcm plans.

With regard to permit reviews, the LFG monitoring and control system and the details of its implementation should be included in the JTD and closure/pcm plans submitted as part of the review application.

With regard to permit actions (for new, revised or modified permits), EAs should make their findings on the permit application submittal based on the current requirements if the package was submitted prior to the deadlines. If the package is submitted after the deadlines the package must include the LFG monitoring and control system in JTD and closure/pcm plans and details on its implementation.

If the deadlines have passed and a system has not been approved and implemented, EA and CIWMB must find the facility non-compliant with the standards; this will prevent the Board from concurring on the issuance of a proposed permit.